

WHAT IS CLAIMED IS:

1. An inkjet ink comprising at least a pigment, a water-soluble solvent and water, the water-soluble solvent comprising:

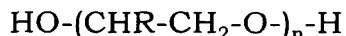
a first water-soluble solvent group containing at least one kind of water-soluble solvent represented by the following general formula (I);

a second water-soluble solvent group containing at least one kind of water-soluble solvent having a solubility parameter which is at least 1 greater than a solubility parameter  $SP_1$  of the at least one kind of water-soluble solvent represented by general formula (I), and;

a third water-soluble solvent group containing at least one kind of water-soluble solvent having a solubility parameter which is at least 1 less than the solubility parameter  $SP_1$ ;

wherein respective contents (% by mass) of the water-soluble solvent groups contained in the inkjet ink satisfy the following equation (1) and the following equation (2):

General formula (I)



Equation (1)

$$W_2/W_1 \geq 1.0$$

Equation (2)

$$0.25 \leq W_3/W_1 \leq 0.75$$

wherein in general formula (I), equation (1) and equation (2),  $n$  represents an integer of 3 to 6;  $R$  represents hydrogen or a methyl group;  $W_1$  represents a content (% by mass) of the first water-soluble solvent

group contained in the inkjet ink;  $W_2$  represents a content (% by mass) of the second water-soluble solvent group contained in the inkjet ink; and  $W_3$  represent a content (% by mass) of the third water-soluble solvent group contained in the inkjet ink.

2. An inkjet ink according to claim 1, wherein the first water-soluble organic solvent group further contains a water-soluble solvent other than the at least one kind of water-soluble solvent represented by general formula (I), having a solubility parameter such that an absolute value of a difference thereof from the solubility parameter  $SP_1$  is less than 1.

3. An inkjet ink according to claim 1, wherein the pigment is self-dispersible in water.

4. An inkjet ink according to claim 3, further containing a polymer anion or a polymer cation.

5. An inkjet ink according to claim 1, further comprising a polymer dispersant, wherein the pigment is dispersed by the polymer dispersant.

6. An inkjet ink according to claim 2, wherein an absolute value of a  $\zeta$  potential of the inkjet ink is in the range of 3 mV to 60 mV.

7. An inkjet ink according to claim 1, wherein a surface tension of the inkjet ink is at least 20 Nm/m and less than 45 mN/m.

8. An inkjet ink according to claim 1, wherein a viscosity of the inkjet ink is at least 1.2 mPa·s and less than 6.0 mPa·s.

9. An inkjet recording method of printing on a recording medium containing a multivalent metal salt, an organic cationic substance or an organic anionic substance, using an inkjet ink containing at least a pigment, a water-soluble solvent and water, wherein:

the water-soluble solvent contains,

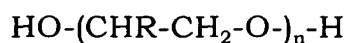
a first water-soluble solvent group containing at least one kind of water-soluble solvent represented by the following general formula (I),

a second water-soluble solvent group containing at least one kind of water-soluble solvent having a solubility parameter which is at least 1 greater than a solubility parameter  $SP_1$  of the at least one kind of water-soluble solvent represented by general formula (I), and

a third water-soluble solvent group containing at least one kind of water-soluble solvent having a solubility parameter which is at least 1 less than the solubility parameter  $SP_1$ ; and

respective contents (% by mass) of the water-soluble solvent groups contained in the inkjet ink satisfy the following equation (1) and the following equation (2):

General formula (I)



Equation (1)

$$W_2/W_1 \geq 1.0$$

Equation (2)

$$0.25 \leq W_3/W_1 \leq 0.75$$

wherein in general formula (I), equation (1) and equation (2), n represents an integer of 3 to 6; R represents hydrogen or a methyl group;  $W_1$  represents a content (% by mass) of the first water-soluble solvent group contained in the inkjet ink;  $W_2$  represents a content (% by mass) of the second water-soluble solvent group contained in the inkjet ink; and  $W_3$  represents a content (% by mass) of the third water-soluble solvent group contained in the inkjet ink.

10. An inkjet recording method according to claim 9, wherein the first water-soluble organic solvent group further contains a water-soluble solvent other than the at least one kind of water-soluble solvent represented by the general formula (I), having a solubility parameter such that an absolute value of a difference thereof from the solubility parameter  $SP_1$  is less than 1.

11. An inkjet recording method according to claim 9, wherein a number of particles having particle diameters of 5  $\mu\text{m}$  or larger contained in the inkjet ink which is added dropwise to a surface of the recording medium is  $1 \times 10^2/\mu\text{l}$  or more.

12. An inkjet recording method in which a liquid composition

containing a multivalent metal salt, an organic cationic substance or an organic anionic substance is imparted to a surface of a recording medium and, thereafter, printing is conducted on a region of the surface of the recording medium to which the liquid composition has been imparted, using an inkjet ink containing at least a pigment, a water-soluble solvent and water, wherein:

the water-soluble solvent contains

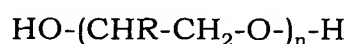
a first water-soluble solvent group containing at least one kind of water-soluble solvent represented by the following general formula (I),

a second water-soluble solvent group containing at least one kind of water-soluble solvent having a solubility parameter which is at least 1 greater than a solubility parameter  $SP_1$  of the at least one kind of water-soluble solvent represented by general formula (I), and

a third water-soluble solvent group containing at least one kind of water-soluble solvent having a solubility parameter which is at least 1 less than the solubility parameter  $SP_1$ ; and

respective contents (% by mass) of the water-soluble solvent groups contained in the inkjet ink satisfy the following equation (1) and the following equation (2):

General formula (I)



Equation (1)

$$W_2/W_1 \geq 1.0$$

Equation (2)

$$0.25 \leq W_3/W_1 \leq 0.75$$

wherein in general formula (I), equation (1) and equation (2), n represents an integer of 3 to 6; R represents hydrogen or a methyl group;  $W_1$  represents a content (% by mass) of the first water-soluble solvent group contained in the inkjet ink;  $W_2$  represents a content (% by mass) of the second water-soluble solvent group contained in the inkjet ink; and  $W_3$  represents a content (% by mass) of the third water-soluble solvent group contained in the inkjet ink.

13. An inkjet recording method according to claim 12, wherein the first water-soluble organic solvent group further contains a water-soluble solvent other than the at least one kind of water-soluble solvent represented by the general formula (I), having a solubility parameter such that an absolute value of a difference thereof from the solubility parameter  $SP_1$  is less than 1.

14. An inkjet recording method according to claim 12, wherein a number of particles having particle diameters of 5  $\mu\text{m}$  or larger in a mixed solution of the inkjet ink and the liquid composition is  $1.0 \times 10^3/\mu\text{l}$  or more.

15. An inkjet recording method of printing on a recording medium by a thermal inkjet system or a piezo-inkjet system using an inkjet ink containing at least a pigment, a water-soluble solvent and water, wherein:

the water-soluble solvent contains

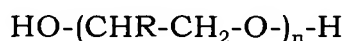
a first water-soluble solvent group containing at least one kind of water-soluble solvent represented by the following general formula (I),

a second water-soluble solvent group containing at least one kind of water-soluble solvent having a solubility parameter which is at least 1 greater than a solubility parameter  $SP_1$  of the at least one kind of water-soluble solvent represented by general formula (I), and

a third water-soluble solvent group containing at least one kind of water-soluble solvent having a solubility parameter which is at least 1 less than the solubility parameter  $SP_1$ ; and

respective contents (% by mass) of the water-soluble solvent groups contained in the inkjet ink satisfy the following equation (1) and the following equation (2):

General formula (I)



Equation (1)

$$W_2/W_1 \geq 1.0$$

Equation (2)

$$0.25 \leq W_3/W_1 \leq 0.75$$

wherein in general formula (I), equation (1) and equation (2),  $n$  represents an integer of 3 to 6;  $R$  represents hydrogen or a methyl group;  $W_1$  represents a content (% by mass) of the first water-soluble solvent group contained in the inkjet ink;  $W_2$  represents a content (% by mass) of the second water-soluble solvent group contained in the inkjet ink; and  $W_3$  represents a content (% by mass) of the third water-soluble solvent group contained in the inkjet ink.

16. An inkjet recording method according to claim 15, wherein the first water-soluble organic solvent group contains a water-soluble solvent other than the at least one kind of water-soluble solvent represented by general formula (I), having a solubility parameter such that an absolute value of a difference thereof from the solubility parameter  $SP_1$  is less than 1.

17. An inkjet recording method according to claim 15, wherein an amount of the inkjet ink to be imparted to a surface of the recording medium is 25 ng or less per one droplet.